

[0022] We claim:

1. An artificial tree comprising:

a base;

a telescoping center pole supported vertically by the base;

a plurality of curvilinear elements of graduated diameter supported from the top of the telescoping center pole by a plurality of circumferentially spaced tethers, the diameter of the curvilinear elements graduating in inverse proportion to the distance above the base;

a plurality of circumferentially spaced branches pivotally connected to the curvilinear elements and extending radially therefrom; and

an electrically powered drive mechanism that is controllable by a user to selectively raise and lower the telescoping center pole.

2. The artificial tree of claim 1 wherein the curvilinear elements are vertically spaced rings.

3. The artificial tree of claim 1 wherein the curvilinear elements are part of a spiral frame.

4. The artificial tree of claim 2, further comprising a top tree section attachable to the top of the telescoping center pole.

5. The artificial tree of claim 4 wherein the top tree section comprises a center pole member and a plurality of circumferentially spaced branches connected to the center pole member.

6. The artificial tree of claim 3 wherein each branch comprises at least one lighting element.

7. The artificial tree of claim 5 wherein each branch of the tree and each branch of the top tree section comprises at least one lighting element.

8. The artificial tree of claim 7 comprising an electrical connection between the lighting elements of the tree and the lighting elements of the top tree section.

9. The artificial tree of claim 1 wherein the drive mechanism comprises an electric motor and a shaft that is rotatable by the motor to raise and lower the telescoping center pole.

10. The artificial tree of claim 9 wherein the shaft has a threaded section.

11. The artificial tree of claim 1 comprising a control panel having at least one switch that is operable by a user to selectively raise and lower the telescoping center pole.

12. The artificial tree of claim 1 comprising a control panel having at least one switch that is operable by a user to selectively activate and deactivate the lighting element.

13. An artificial tree comprising:

- a base;
- a telescoping center pole supported vertically by the base;
- a plurality of ring assemblies of graduated diameter supported from the top of the telescoping center pole by a plurality of circumferentially spaced tethers;
- a plurality of circumferentially spaced branches pivotally connected to each ring assembly and extending radially therefrom; and
- an electrically powered drive mechanism that is controllable by a user to selectively raise and lower the telescoping center pole.

14. The artificial tree of claim 13, further comprising a top tree section attachable to the top of the telescoping center pole.

15. The artificial tree of claim 14 wherein the top tree section comprises a center pole member and a plurality of circumferentially spaced branches connected to the center pole member.

16. The artificial tree of claim 13 wherein each branch comprises at least one lighting element.

17. The artificial tree of claim 14 wherein each branch of the tree and each branch of the top tree section comprises at least one lighting element.

18. The artificial tree of claim 17 comprising an electrical connection between the lighting elements of the tree and the lighting elements of the top tree section.

19. The artificial tree of claim 13 wherein each ring assembly further comprises two concentric rings maintained in fixed relation to each other by a plurality of radially extending spokes disposed between the two rings, the two concentric rings comprising an inner ring and an outer ring.

20. The artificial tree of claim 19 wherein each branch is pivotally connected to an inner ring of a ring assembly.

21. The artificial tree of claim 20 wherein each branch is pivotable downwardly into a resting position against the outer ring connected to the inner ring to which the branch is pivotally connected.

22. The artificial tree of claim 13 wherein the drive mechanism comprises an electric motor and a shaft that is rotatable by the motor to raise and lower the telescoping center pole.

23. The artificial tree of claim 22 wherein the shaft has a threaded section.

24. The artificial tree of claim 13 comprising a control panel having at least one switch that is operable by a user to selectively raise and lower the telescoping center pole.

25. The artificial tree of claim 16 comprising a control panel having at least one switch that is operable by a user to selectively activate and deactivate the lighting element.

26. An artificial tree comprising:

- a base;
- a telescoping center pole supported vertically by the base;
- a plurality of rings of graduated diameter supported from the top of the telescoping center pole by a plurality of circumferentially spaced tethers;
- a plurality of circumferentially spaced branches pivotally connected to each ring and extending radially therefrom; and
- an electrically powered drive mechanism that is controllable by a user to selectively raise and lower the telescoping center pole.

27. The artificial tree of claim 26, further comprising a top tree section attachable to the top of the telescoping center pole.

28. The artificial tree of claim 27 wherein the top tree section comprises a center pole member and a plurality of circumferentially spaced branches connected to the center pole member.

29. The artificial tree of claim 26 wherein each branch comprises at least one lighting element.

30. The artificial tree of claim 27 wherein each branch of the tree and each branch of the top tree section comprises at least one lighting element.

31. The artificial tree of claim 30 comprising an electrical connection between the lighting elements of the tree and the lighting elements of the top tree section.

32. The artificial tree of claim 26, further comprising at least one flexible branch tether that limits downward movement of each pivotally connected branch around the ring to which it is pivotally connected.

33. The artificial tree of claim 32 wherein the branch tethers are supported from an elevation near the top of the telescoping center pole.

34. The artificial tree of claim 26 wherein the drive mechanism comprises an electric motor and a shaft that is rotatable by the motor to raise and lower the telescoping center pole.

35. The artificial tree of claim 34 wherein the shaft has a threaded section.

36. The artificial tree of claim 26 comprising a control panel having at least one switch that is operable by a user to selectively raise and lower the telescoping center pole.

37. The artificial tree of claim 29 comprising a control panel having at least one switch that is operable by a user to selectively activate and deactivate the lighting element.

38. An artificial tree comprising:

- a base;
- a telescoping center pole supported vertically by the base;
- a spiral frame supported from the top of the telescoping center pole by a plurality of circumferentially spaced tethers, the spiral frame having a gradually increasing diameter in the downward direction;
- a plurality of circumferentially spaced branches pivotally connected to the spiral frame and extending radially therefrom; and
- an electrically powered drive mechanism that is controllable by a user to selectively raise and lower the telescoping center pole.

39. The artificial tree of claim 38 wherein each branch comprises at least one lighting element.

40. The artificial tree of claim 38 wherein the drive mechanism comprises an electric motor and a shaft that is rotatable by the motor to raise and lower the telescoping center pole.

41. The artificial tree of claim 40 wherein the shaft has a threaded section.

42. The artificial tree of claim 38 comprising a control panel having at least one switch that is operable by a user to selectively raise and lower the telescoping center pole.

43. The artificial tree of claim 38 comprising a control panel having at least one switch that is operable by a user to selectively activate and deactivate the lighting element.

44. An automatically erectable support structure comprising:

- a base;
- a plurality of telescoping tubular members comprising a first member that is disposed in fixed relation to the base and at least one other member that can telescope upwardly from the first member;
- a vertical shaft rotatably mounted inside the base and extending upwardly from the base; and
- an electric motor selectively providing rotational motion to the vertical shaft in one of two rotational directions;
- the vertical shaft further comprising a threaded upper portion cooperatively engaged with at least one other tubular member to elevate the at least one other member relative to the first tubular member when the shaft is rotated in a first rotational direction and to lower the at least one other member relative to the first tubular member when the shaft is rotated in the second rotational direction.

45. The support structure of claim 44 comprising at least second and third tubular members telescoping upwardly from the first tubular member.

46. The support structure of claim 45 wherein the third tubular member telescopes upwardly from the second tubular member.

46. The support structure of claim 46, further comprising a tension line having a first end connected to the first tubular member and a second end connected to the third tubular member.

47. The support structure of claim 44 comprising a tension line having a first end connected in fixed relation to the base and a second end connected in fixed relation to a tubular member other than the first tubular member.

48. The support structure of claim 44, further comprising at least one switch controlling the rotational direction.